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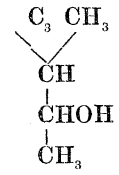
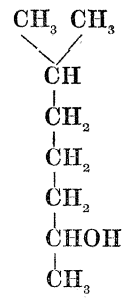
| | | Boiling-point. | Difference. |
|---|---|---|---|
| | | | 26° |
| Secondary amyl alcohol, |  | 108° | |
| | | | 3 × 24° |
| Secondary octyl alcohol, |  | 181° | |

It is seen that the difference in the boiling-points in both series is about 24° for each increase of $CH_2$; and further, that the boiling-point of a member of the first series is the same as the boiling-point of that member of the second series which contains $CH_2$ more.

VI. "Announcement of the intention of the Swedish Government to send out a new Polar Expedition." In a Letter addressed to the President, by Prof. A. E. Nordenskiold. Communicated by the President. Received May 14, 1868.

Stockholm, May 9, 1868.

Dear Sir,—Some days ago I had the pleasure of receiving your kind letter of the 12th February, and the same day I was informed that the sum necessary for a new Polar Expedition was furnished by some private gentlemen of Gottenburg. Since then this undertaking has been embraced with great interest by the Swedish Government and the navy, who have granted the new expedition a strong and excellent screw-steamer, which will be supplied with provisions for a year.

The main object of the expedition will be to penetrate northward from Spitzbergen; but several naturalists will also accompany it.

I hope the new undertaking will be embraced by you with the same interest as the former ones, though the measurement of an arc of meridian does not yet make the aim of our enterprise. But I think that during the expedition I shall be able to amend my omission of measuring the hill south of Fairhaven*, which surely will furnish an excellent datum for determining

* Philosophical Transactions, 1824, p. 290.

the rising of the land in this part of Spitzbergen. I shall also, where the rocks are hard enough for the purpose, bore along the shores as many watermarks as possible, to give in the future sure data for the settling of the same interesting question.

If it were possible to obtain a good pendulum we also would make pendulum observations, at least if the expedition remains in these regions during the winter.

P.S. The expedition will start from Gottenburg July the 15th.

VII. "Further Observations on the Spectra of the Sun, and of some of the Stars and Nebulæ, with an attempt to determine therefrom whether these Bodies are moving towards or from the Earth." By WILLIAM HUGGINS, F.R.S. Received April 23, 1868.

(Abstract.)

§ I. *Introduction.*

The author states that at the time of the publication of the "Observations on the Spectra of the Fixed Stars," made jointly by himself and Dr. W. A. Miller, Treas. R.S., they were fully aware that the direct comparisons of the bright lines of terrestrial substances with the dark lines in the spectra of the stars, which they had accomplished, were not only of value for the more immediate purpose for which they had been undertaken, namely, to obtain information of the chemical constitution of the investing atmospheres of the stars, but that they might possibly serve to reveal something of the motions of the stars relatively to our system. If the stars were moving towards or from the earth, their motion, compounded with the earth's motion, would alter to an observer on the earth the refrangibility of the light emitted by them, and consequently the lines of terrestrial substances would no longer coincide in position in the spectrum with the dark lines produced by the absorption of the vapours of the same substances existing in the stars.

The method employed by them would certainly have revealed an alteration of refrangibility as great as that which separates the lines D. They had, therefore, proof that the stars which they had examined, among others Aldebaran, $\alpha$ Orionis, $\beta$ Pegasi, Sirius, $\alpha$ Lyræ, Capella, Arcturus, Castor, Pollux, were not moving with a velocity which would be indicated by such an amount of alteration of position in a line.

Since, however, a change of refrangibility corresponding to that which separates the components of D would require a velocity of about 196 miles per second, it seemed to them premature to refer to this bearing of their observations. The earth's motion, and that of the few stars of which the parallax has been ascertained, would make it probable that any alteration in position would not exceed a fraction of the change which would have been observed by them.